

Algebra 3 Assignment # 10 — Review Worksheet

(1) Solve for x please.

(a) $9^{2-x} = 27^{2x+1}$

(i) $9^{\log_9(4)} = x$

(b) $8^{2x-5} = 16^{x+1}$

(j) $3^{\log_9(4)} - 9^{\log_3(4)} = x$

(c) $4 \cdot 8^{2x} = \left(\frac{1}{16}\right)^{1-x}$

(k) $3(\log_8(x))^2 - 2\log_8(x) - 1 = 0$

(d) $\log_8(\sqrt[3]{4}) = x$

(l) $\log_5(2x+3) = \log_5(1-x)$

(e) $\log_{\frac{1}{4}}(x) = -\frac{1}{2}$

(m) $\log_2(x+1) + \log_2(3x-1) = 5$

(f) $\log_x(16) = -\frac{4}{3}$

(n) $\log_2(x-3) - \log_2(x+1) = \log_2(8)$

(g) $\log_x(.125) = 3$

(o) $\log_7(x+1) + \log_7(x) + \log_7(2x+1) = \log_7(30)$

(h) $\log_3(\log_8(x)) = -1$

(p) $4^{\log_4(2)} + 4^{\log_2(\sqrt{6})} = 8^{\log_4(x)}$

(2) Use a calculator to solve for x. Express answers correct to 3 decimal places.

(a) $3^x = 8$

(b) $2^{3x-2} = 5^{1-x}$

(c) $\log_3(2) = x$

(d) $(\ln(x))^3 - 4\ln(x) = 0$

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Answers

(1) (a) $\frac{1}{8}$

(i) 4

(b) $\frac{19}{2}$

(j) -14

(c) -3

(k) $8, \frac{1}{2}$

(d) $\frac{2}{9}$

(l) $-\frac{2}{3}$

(e) 2

(m) 3

(f) $\frac{1}{8}$

(n) \emptyset

(g) $\frac{1}{2}$

(o) 2

(h) 2

(p) 4

(2) (a) 1.893

(b) 0.812

(c) 0.631

(d) 1 , 7.389 , 0.135